



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/939,315	08/24/2001	Stepan Sokolov	SUN1P843/P6724	2845

22434 7590 04/20/2006  
BEYER WEAVER & THOMAS LLP  
P.O. BOX 70250  
OAKLAND, CA 94612-0250

EXAMINER

WOOD, WILLIAM H

ART UNIT	PAPER NUMBER
2193	

DATE MAILED: 04/20/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 09/939,315	<b>Applicant(s)</b> SOKOLOV, STEPAN	
	<b>Examiner</b> William H. Wood	<b>Art Unit</b> 2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 4,5,7,8,11-15 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 4,5,7,8,11-15 and 17-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 4-5, 7-8, 11-15 and 17-22 are pending and have been examined.

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02 March 2006 has been entered.

#### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 4, 5, 7, 8, 11-13 and 20-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claim 4 recites "pushing a

reference to said JAVA object on an execution stack” as being performed by the Bytecode instruction. Applicant’s originally filed disclosure contradicts this (figures 2A-3, notice element 206 and 302; page 7, paragraph 0022). As is clearly evident, the claimed inventive Bytecode instruction does not push a reference as recited in claim 4. Claims 5, 7, 8, 11-13 and 20-22 require correction along with claim 4 for the same deficiency.

4. Claims 4, 5, 7, 8, 11-13 and 20-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims are not described for “determining a string representation of a field associated with said JAVA object by accessing said JAVA object” (see claim 4, for example). The disclosure provides no suggestion of how to accomplish this crucial functionality.

5. Claims 4-5, 7-8, 11-15 and 17-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims are not

enabled for “determining a string representation of a field associated with said JAVA object by accessing said JAVA object” (see claim 4, for example).

Any analysis of whether a particular claim is supported by the disclosure in an application requires a determination of whether that disclosure, when filed, contained sufficient information regarding the subject matter of the claims as to enable one skilled in the pertinent art to make and use the claimed invention. A patent need not teach, and preferably omits, what is well known in the art. Thus, the claimed invention must be enabled so that any person skilled in the art can make and use the invention without undue experimentation. The fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation.

The experimentation for the present claims is undue:

- The nature of the invention and the breadth of the claims is to an inventive Bytecode instruction, which accomplishes “determining a string representation of a field associated with said JAVA object by accessing said JAVA object”, for a JAVA virtual machine. Therefore, such an instruction’s implementation must be enabled in the disclosure. The disclosure merely states the existence of an instruction and it accomplishes “determining a string representation of a field associated with said JAVA object by accessing said JAVA object”. The disclosure provides no suggestion of how to

accomplish this crucial functionality. Essentially, the describing of the inventive feature is left out of the disclosure.

- The state of the prior art, with regard to JAVA virtual machine Bytecode instructions, is the currently existing instruction set. The JAVA virtual machine already possesses a complete set of fully implemented instructions, allowing a typical user to make use of the JAVA virtual machine immediately. The current claimed invention however, requires the typical user to develop the implementation of the crucial functionality of a new instruction accomplishing “determining a string representation of a field associated with said JAVA object by accessing said JAVA object”. The state of the art is for one of ordinary skill to immediately use the JAVA virtual machine without actually implementing the Bytecode instruction set.
- There are no working examples, suggestions or direction provided as to the implementation of the described claimed invention Bytecode instruction.
- Therefore, the present claimed invention requires undue experimentation.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 4, 5, 7, 8, 11-13 and 20-22 are rejected under 35 U.S.C. 112, second paragraph, as failing to set forth the subject matter which applicant(s) regard as their invention. Evidence that claims 4-5, 7-8, 11-15 and 17-22 fail(s) to correspond in scope with that which applicant(s) regard as the invention can be found in the originally filed disclosure. In that paper, applicant has stated the claimed inventive Bytecode instruction does not push a reference to a JAVA object as recited in claim 4 (figures 2A-3, notice element 206 and 302; page 7, paragraph 0022) and this statement indicates that the invention is different from what is defined in the claim(s) because the claims indicate the bytecode instruction does perform the pushing a reference to a JAVA object.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

9. Claims 4-5, 8, 11-12, 14-15, 17-18 and 20-21 are rejected under 35 U.S.C. 102(a) as being anticipated by Peter **Hagggar**, “Java bytecode: Understanding bytecode makes you a better programmer”.

Claim 4

**Hagggar** disclosed a JAVA virtual machine residing on a computing apparatus and operating in a JAVA computing environment (*page 2, section “The details”, first paragraph*), said JAVA virtual machine capable of executing a Bytecode instruction to determine a string representation associated with a JAVA object, thereby determining said string representation of said JAVA object without invoking a JAVA “to\_string” method (*page 3, code segment and second paragraph under code segment, “getfield” bytecode*), wherein said virtual machine is capable of performing the following operations when said Bytecode instruction is executed in order to determine said string representation of a said JAVA object:

pushing a reference to said JAVA object on an execution stack (*page 3, code segment and first paragraph under code segment, “aload\_0” bytecode*);

popping said reference to said JAVA object from said execution stack (*column 5, lines 24-27, “getfield” bytecode*);

determining a string representation of a field associated with said JAVA object by accessing said JAVA object using said reference (*page 3, code*



*segment and second paragraph under code segment, "getfield" bytecode; "Field java.lang.String name"); and*

pushing a reference to said string representation of said field on top of said execution stack (*page 3, code segment and second paragraph under code segment, "getfield" bytecode*).

Claim 5

**Haggar** disclosed a JAVA virtual machine as recited in claim 4, wherein said JAVA virtual machine executes a JAVA Bytecode instruction, said JAVA Bytecode instruction operating to determine said string representation associated with said JAVA object (*page 3, code segment and second paragraph under code segment, "getfield" bytecode; "Field java.lang.String name"); thereby allowing said string representation to be determined without invoking a JAVA method (page 3, code segment and second paragraph under code segment, "getfield" bytecode*).

Claims 8, 11-12, 14-15, 17-18 and 20-21

The limitations of claims 8, 11-12, 14-15, 17-18 and 20-21 correspond to those found in claims 4 and 5 and as such are rejected in the same manner. Note Aload bytecode instruction found in **Haggar**, page 3, code segment and first paragraph after code segment.

***Claim Rejections - 35 USC § 103***

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. Claims 7, 13, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Peter **Haggar**, "Java bytecode: Understanding bytecode makes you a better programmer" in view of **Blandy** et al. (USPN 6,654,778).

*Claims 7, 13, 19 and 22*

**Haggar** did not explicitly state a JAVA virtual machine as recited in claim 5, wherein said JAVA virtual machine operates in an embedded system. **Blandy** demonstrated that it was known at the time of invention to implement JAVA virtual machines in embedded systems (column 3, lines 66-67) and further to implement the "getfield" bytecode instruction in such systems (column 5, lines 24-27). It would have been obvious to one of ordinary skill in the art at the time of invention to implement the "getfield" bytecode within an embedded system as found in **Blandy**'s teaching. This implementation would have been obvious because one of ordinary skill in the art would be motivated to make use all potential environments for greatest economic impact and marketability.

***Response to Arguments***

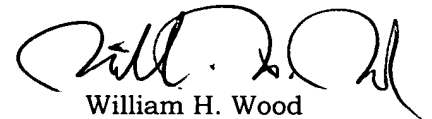
12. Applicant's arguments with respect to claims 4-5, 8, 11-12, 14-15, 17-18 and 20-21 have been considered but are moot in view of the new ground(s) of rejection.

***Correspondence Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (571)-272-3736. The examiner can normally be reached 9:00am - 5:30pm Monday thru Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (571)-272-3719. The fax phone numbers for the organization where this application or proceeding is assigned are (571)273-8300 for regular communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.



William H. Wood  
Patent Examiner  
AU 2193  
April 10, 2006